




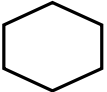

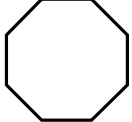
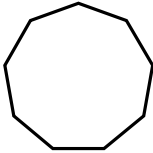
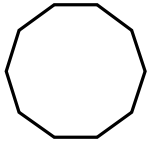
02/13/14 Agenda:

- Review Test
- Section 8.1 - Sum of Interior Angles
- Activity - Finding the Interior Angle Sum of Polygons
- Homework
 - Worksheet 1 - Finding Interior Angle Sum

Section 8.1 - Polygon Names & Interior Angle Measures

Target 8A



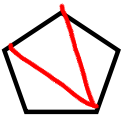
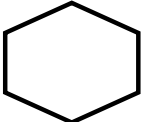
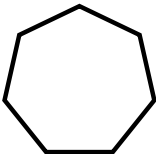
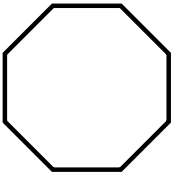
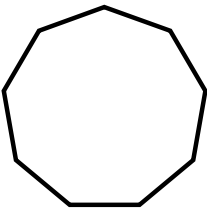
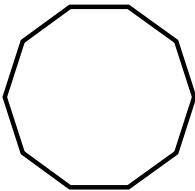
February 13, 2014

Goals:	<ol style="list-style-type: none"> 1. Be able to name polygons by number of sides. 2. Find the sum of the interior angles in a polygon. 		
Definitions:	<p>Polygon - Any enclosed shape made of straight lines.</p> <p>Diagonal - A line segment that connects two nonconsecutive vertices in a polygon.</p>		
Polygon Names:	# of Sides	Name	
		3	TRIANGLE
		4	QUADRILATERAL
		5	PENTAGON
		6	HEXAGON
		7	HEPTAGON/ SEPTAGON
		8	OCTAGON
		9	NONAGON
		10	DECAGON
		12	DO-DECAGON
		n	n-AGON

Section 8.1 - Polygon Names & Interior Angle Measures

Target 8A

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Number of Sides		# of triangles	Sum of Angle Measures
3		1	180°
4		2	360°
5		3	540°
6		4	720°
7		5	900
8		6	1080
9		7	1260
10		8	1440

Section 8.1 - Polygon Names & Interior Angle Measures

Target 8A

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What did we discover about the sum of the interior angles?

Can we write a formula?

$N = \# \text{ OF SIDES}$

$$(N - 2) \cdot 180 =$$

SUM OF
INTERIOR
ANGLES

THEOREMS

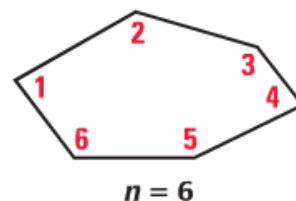
For Your Notebook

THEOREM 8.1 Polygon Interior Angles Theorem

The sum of the measures of the interior angles of a convex n -gon is $(n - 2) \cdot 180^\circ$.

$$m\angle 1 + m\angle 2 + \cdots + m\angle n = (n - 2) \cdot 180^\circ$$

Proof: Ex. 33, p. 512 (for pentagons)



COROLLARY TO THEOREM 8.1 Interior Angles of a Quadrilateral

The sum of the measures of the interior angles of a quadrilateral is 360° .

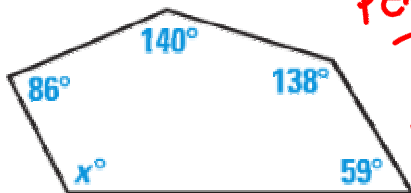
Proof: Ex. 34, p. 512

Section 8.1 - Polygon Names & Interior Angle Measures

Target 8A

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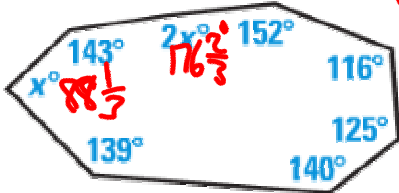
You try: Find the sum of the interior angles, then find the missing angle.



PENTAGON
TOTAL° = 540

$$540 - (86 + 140 + 138 + 59) = x$$

$$540 - 423 = x \quad x = 117^\circ$$



8 SIDES
(8-2) · 180 = 1080° TOTAL

$$3x + 815 = 1080$$

$$3x = 265$$

$$x = 88.\bar{3}$$

$$\begin{array}{r} 143 \\ \times 152 \\ \hline 116 \\ 2152 \\ \hline 21520 \end{array}$$

$$\begin{array}{r} 101 \\ \hline 3x \quad 815 \end{array}$$

